SEE-GRID:
Advancing South-East Europe
into the eInfrastructure era

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- Together they constitute the basic components of the **eInfrastructure in an extended ERA**

- **EGEE, SEE-GRID and other extensions**
  ⇒ will bind national Grid infrastructures towards establishing a production quality Grid for Europe

- **GEANT, SEEREN and other extensions**
  ⇒ bind national networks and create a high performance production network for Europe
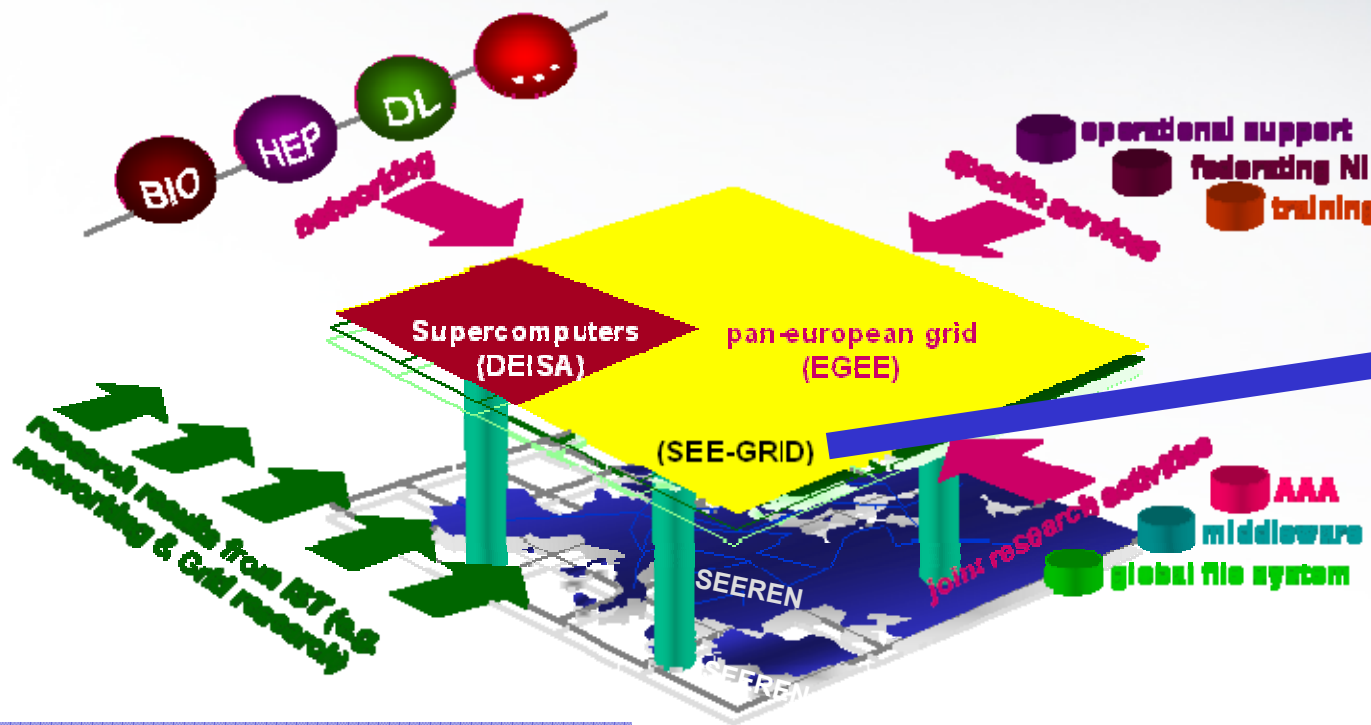
The SEE-GRID initiative
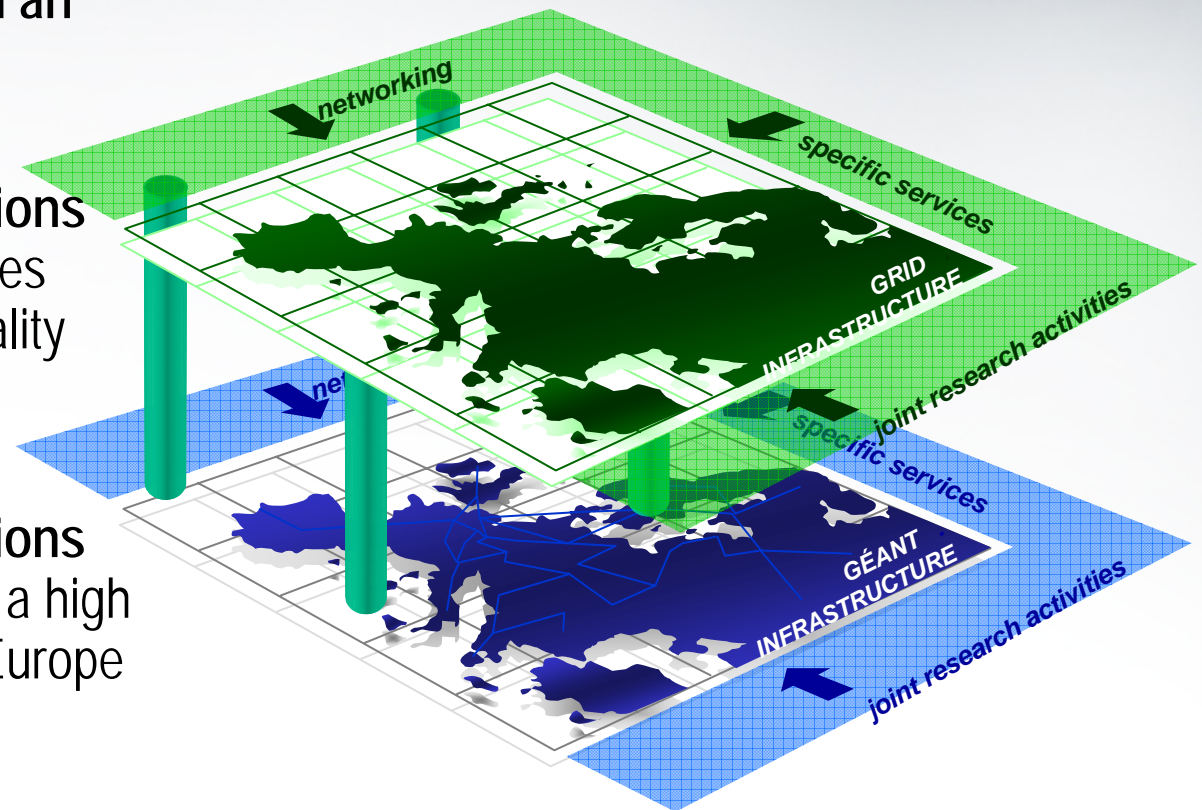
Contribute to building a Pan-EU eInfrastructure by expanding the "eInfrastructure inclusion" into South-East Europe

SEE-GRID
South Eastern European GRid-enabled
eInfrastructure Development

Supercomputers (DEISA)

pan-european grid (EGEE)

(SEE-GRID)

SEEREN

operational support
federating NI
training

AAA
middleware
global file system

joint research activities

Contract No.: FP6-RI-002356
Project type: Specific Support Action (SSA)
Start date: 01/05/2004
Duration: 24 months
Total Budget: 1,215,000 €

> http://www.see-grid.org

SEE-GRID snapshot (1/2)

- Pilot infrastructure with sites in all SEE partners
  - Beneficiary SEE partners installed 2-3 sites per country with O(10 CPUs, 100 GBs) per site
  - Core services deployed (RB-BDII, VOMS, MyProxy) support the pilot SEE-GRID VO
  - P-GRADE portal technology deployed in order to access the grid and support application execution
- SE4SEE (Search Engine for South-East Europe) and VIVE (Volumetric Image Visualization Environment) apps
- Regional Catch-all Certification Authority accredited by EUGridPMA is operational
- National Grid Initiatives inaugurated in beneficiary SEE partners (e.g. AEGIS/Serbia-Montenegro, MARGI/FYRoM)
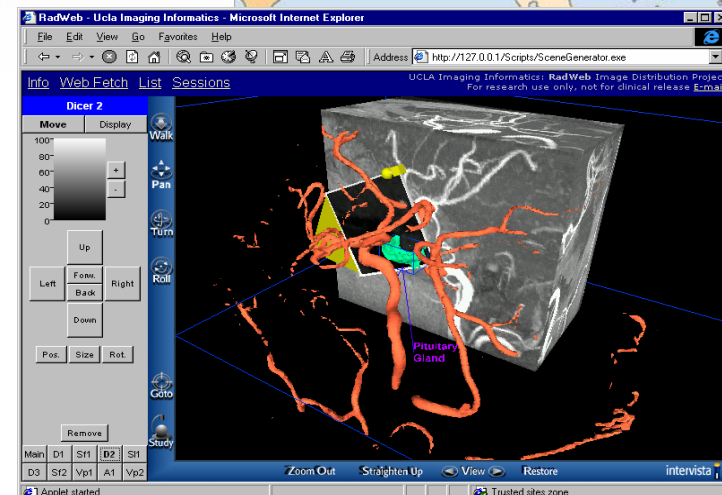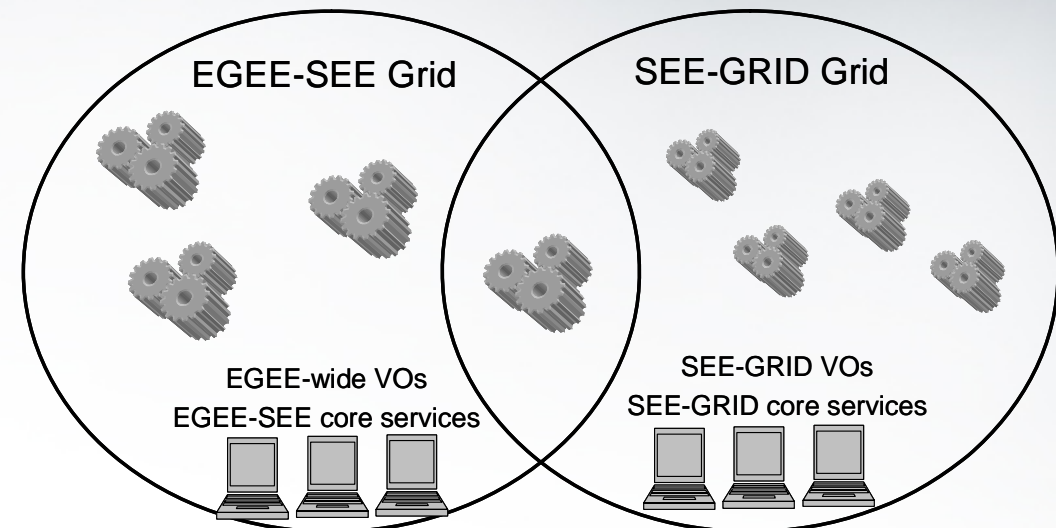
SEE-GRID snapshot (2/2)

- Training and Dissemination events
  - Training on GILDA testbed, GENIUS, P-GRADE portal, etc.
  - SEE-GRID Policy Workshop delivered "A roadmap for establishing National Grid Initiatives"
- Alternative roadmaps and research
  - deployment of LCG m/w over working installations of Debian GNU/Linux clusters (when only RedHat Linux 7.3 and Scientific Linux were supported)
- Sites in Serbia-Montenegro, Turkey, Croatia, FYROM migrated into the EGEE-SEE infrastructure
- Serbia-Montenegro, Turkey, Croatia joined EGEE-II proposal

- **Key issue: Sustainability - still the main concern**

EGEE-SEE Grid

SEE-GRID Grid

EGEE-wide VOs
EGEE-SEE core services

SEE-GRID VOs
SEE-GRID core services

Partnership with EGEE

- MoU signed to govern projects' communication and exchange of know-how
- Common partners: CERN, GRNET, ICI, IPP-BAS, SZTAKI
- Related activities:
  - EGEE NA2-NA3 (Dissemination-Training) – SEE-GRID WP5
    - e.g. Joint conferences - training events, e.g. training in Istanbul on GILDA and GENIUS, plan to organize trainings in collaboration with UNESCO in SEE.
  - EGEE NA4 (Applications) – SEE-GRID WP3
    - Promote new applications to EGEE
  - EGEE SA1 (operations) – SEE-GRID WP4
    - Migrate EGEE-developed M/W to SEE-GRID
    - Expand SEE ROC to include SEE-GRID partners that will be integrated in the EGEE infrastructure
- In a nutshell:
  a CERN/EGEE-liaison (a "champion") that was committed to make SEE-grid work!

SEE-GRID-2: New Directions

- Policy-focused deployment strategy
  - achieve Grid uptake and buy-in beyond the "usual suspects" of the R&E community (-> government, industry, policy-makers…)
  - Shift priority from a "<u>top-down</u>" approach (i.e. from regional project execution to national "copying"/implementing) towards a a "<u>bottom-up</u>" approach (from national priorities, cooperation, and innovation to regional cohesiveness, vision, and break-through)

- Proliferation of Grid Resource Centers
  - Expand regionally to include new countries/areas and widen the SEE eInfra community
  - Expand nationally to include new sites/institutes and strengthen collaboration in each country – create a web of resource centers also at national level, not only at regional.

- Application-driven deployment approach
  - serve the needs of diverse and multi-disciplinary communities
  - extend the user-base – USE the grid, USE the network, USE the Infrastructure
  - get closer to the public-at-large.
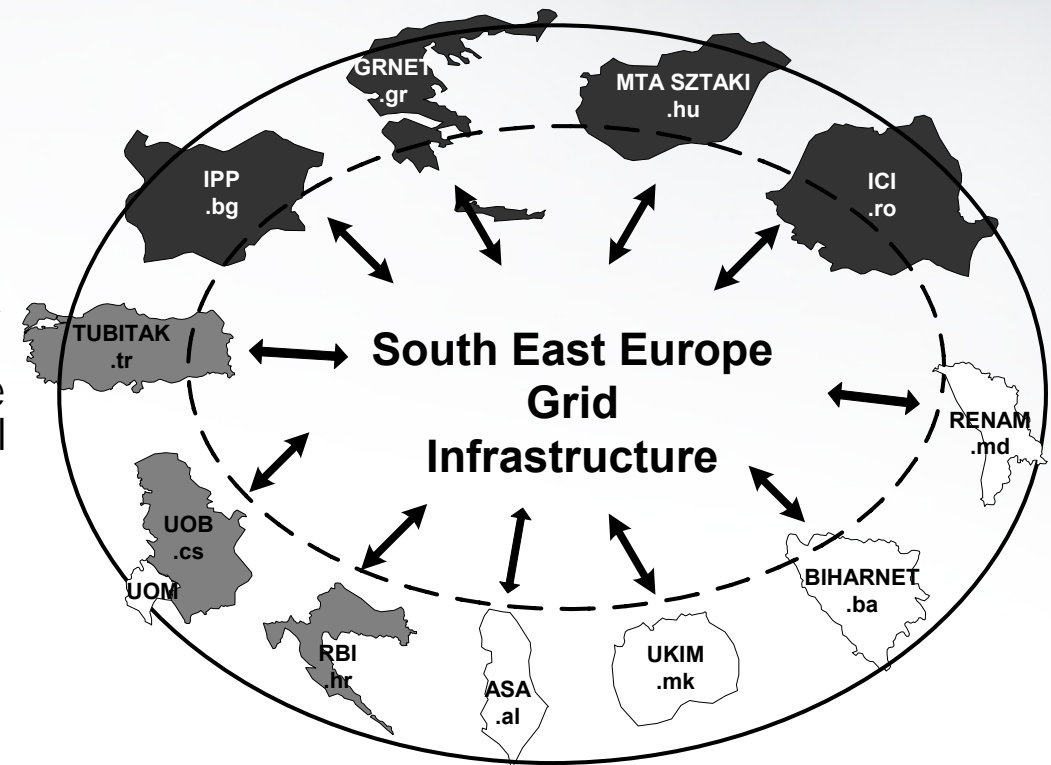
SEE-GRID-2 partnership

Planned Start date:	01/05/2006	
Planned Duration:	24 months	
Planned Total Budget:	2,002,691 €	

SEE-GRID
South Eastern European GRid-enabled
eInfrastructure Development

Pan-European
Production-level
Grid Infrastucture

- SEE-GRID-2 partnership consists of 13 contractors representing 11 SEE countries
- Partnership includes
  - EU member-states (Greece, Hungary)
  - Acceding Countries (Bulgaria, Romania)
  - Candidate Countries (Croatia, Turkey)
  - Third Countries - Western Balkans (Albania, Bosnia-Herzegovina, Former Yugoslav Republic of Macedonia, Serbia-Montenegro)
  - European Neighborhood Policy countries (Moldova)
- By using participation in EGEE as reference for a partner's maturity, three layers can be identified:
  - Bulgaria, Greece, Hungary, and Romania were members of EGEE and will carry on in EGEE-II
  - Croatia, Serbia, and Turkey advanced within the course of SEE-GRID and have joined EGEE-II
  - Albania, Bosnia-Herzegovina, Former Yugoslav Republic of Macedonia, Moldova, and Montenegro will work towards integration with European eInfrastructures within the course of SEE-GRID-2.
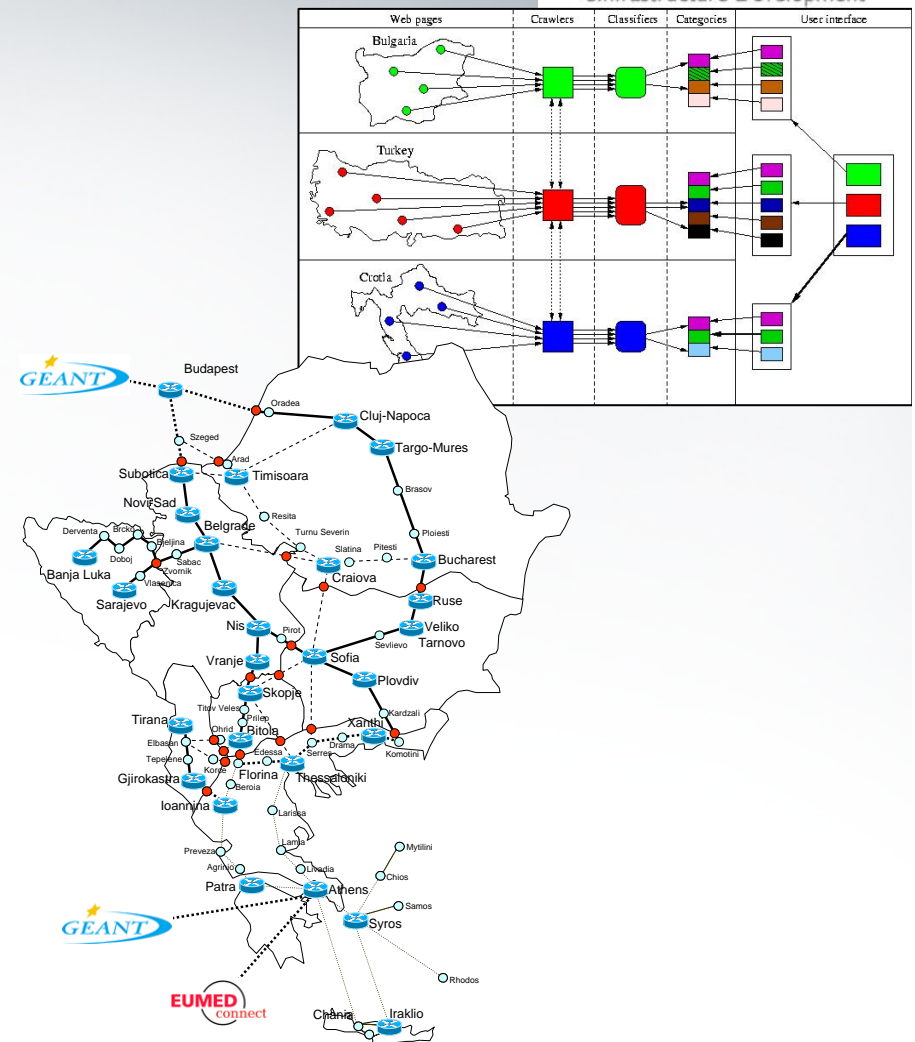

South East Europe
Grid
Infrastructure

GRNET .gr, MTA SZTAKI .hu, ICI .ro, IPP .bg, TUBITAK .tr, RENAM .md, UOB .cs, UOM, BIHARNET .ba, RBI .hr, ASA .al, UKIM .mk

SEE-GRID-2 Objectives: Ensure Sustainable Development

- National commitment and support for incubating NGIs
  - National support at R&E and Ministerial level
  - (annually increasing) local financing
  - National eInfrastructure Strategy
    - unified Acceptable Use Policy in cooperation with NREN
    - deployment of Grid Resource Centers
    - accredited National Grid Certification Authorities
    - National Grid Operation Centers
  - NGI to include partners beyond project partnership
- Engage regional and national user communities
  - involve a wide range of institutes and communities and support Grid applications from groups in various scientific domains
  - measure and assess user engagement via questionnaire and other feedback mechanisms
  - prepare a "Developer's Guide for Porting to the Grid" that captures the experience gained in the project by applications' developers that are supported directly by SEE-GRID-2 and use this guide to accelerate the migration of new applications to the Grid

SEE-GRID-2 Objectives: Upgrade SEE grid infrastructure

- Upgrade the capacity of the regional pilot infrastructure
  - increase number of sites and resources in the pilot regional infrastructure (more than 2x current regional resources)
  - increase the number of sites migrating into EGEE
- Guarantee stability and interoperability of the infrastructure
  - operational procedures, timely updates to M/W and OS, and advance notices of updates and downtimes
  - available network resources and bandwidth-on-demand requirements
  - monitor infrastructure performance and assess its usage
- Support the accreditation of national Grid CAs.
  - Per country: One CA / Multiple RAs
- Deploy portal technology for accessing the grid and supporting application development and deployment
  - re-engineering P-GRADE Portal to the requirements of the new middleware
- Draw upon deployment experience/results of other grid projects (EGEE/EGEE-II, EUMEDGRID, BalticGrid, EELA, etc)
  - MoUs and cooperation with partner project
  - Share key deliverables and results

SEE-GRID-2 Objectives: Strengthen the Human Network

- Liaise with and beyond SEE user communities
    - approach SEE industrial partners
    - workshops/seminars in other regions / eInfa projects
- Training events
    - at regional level for site admins and end-users
    - at national-level for country's site admins and end-users – NOT at project budget
- Dissemination events
    - at regional level for policymakers and public at large
    - at national-level for country's policymakers and public at large – NOT at project budget
- Regional eInfra projects Policy Workshop
- SEE Education and Research: "virtual SEE Doctoral School on Advanced Topics In Networking and Grids (eInfrastructures)"
    - pool of professors to guide students in their Ph.D.s

See-Infra strategic priority

- Strategic success metrics of SEE-xxx initiatives:
  - <u>not</u> Gbps/sec
  - <u>not</u> the number of nodes
  - <u>not</u> the TBs of storage

- SEE-GRID/SEE-GRID-2: puzzle pieces of RTD efforts to sustain **SEE development**
  - **Increasing the retention of talented scientists in the SEE**
  - **Pursuing joint R&D efforts among SEE countries**
  - **Making available the benefits of the Information Society for all SEEtizens**
  - **Easing the digital divide between the region and the rest of the continent**
  - **Improvement of regional competitiveness in all market sectors**
  - **Regional political stability and cohesiveness**
  - **Future enlargement of the European Union**
  - **…**

Conclusions

- SEE-GRID was the first step for regional eInfrastructure integration

- Partnership with CERN/EGEE to extend within EGEE-II/SEE-GRID-2

- Inclusion in the European trends is critical for the SEE region

- Technologies are a facilitator for wider integrations and prosperity;
  Grid is the means, not the end

Thank you for your attention
http://www.see-grid.org